Amendments to the Claims:

Kindly amend Claims 5, 13, 20, 22, 34 and 47.

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1. (Previously Presented) An imaging device for capturing optical image data, the device comprising:

an imager for generating an image signal;

a memory component that receives the image signal from the imager and stores the image signal as image data; and

a processor that executes an exposure control routine by implementing a first module that controls the exposure and gain setting in the imager and a second module that implements computations in response to exposure data transmitted from the first module to determine a targeted exposure and gain setting.

2. (Original) The imaging device of Claim 1, wherein the imager generates the image signal from multi-dimensional symbologies.

3. (Original) The imaging device of Claim 1, wherein the processor provides the imaging device with multi-tasking capabilities.

4. (Original) The imaging device of Claim 1, wherein the processor executes at least one application program of the imaging device.

5. (Currently amended) The imaging device of Claim 1, wherein the processor executes an ~~opertaing~~ operating system of the imaging device.

6. (Original) The imaging device of Claim 1, wherein the processor executes at least one application program and an operating system of the imaging device.

7. (Original) The imaging device of Claim 1, wherein the first module is implemented in a high priority thread.

8. (Original) The imaging device of Claim 1, wherein the first module is implemented in a high priority task.

9. (Original) The imaging device of Claim 1, wherein the first module is implemented in an interrupt service routine.

10. (Original) The imaging device of Claim 1, wherein the second module is implemented in a low priority thread routine.

11. (Original) The imaging device of Claim 1, wherein the second module is implemented in a low priority task routine.

12. (Original) The imaging device of Claim 1, wherein the second module comprises histogram processing.

13. (Currently Amended) The imaging device of Claim 1, wherein the first module is implemented in ~~a~~ an interrupt service routine and the second module is implemented in a low priority task routine.

14. (Original) The imaging device of Claim 1, further comprising a Direct Memory Access (DMA) controller that receives the image signals from the imager, responds to an image capture command from the second module and transfers captured image signals into the memory component.

15. (Original) The imaging device of Claim 14, wherein the processor comprises the DMA controller.

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16. (Original) The imaging device of Claim 1, further comprising a programmable logic device that serves as an interface between the imager and the processor.

17. (Original) The imaging device of Claim 16, wherein the programmable logic device comprises a DMA controller that receives the image signals from the imager, responds to an image capture command from the second module and transfers captured image signals into the memory module.

18. (Original) An imaging device for capturing optical image data, the device comprising:

an imager for generating an image signal;

a memory component that receives the image signal from the imager and stores the image signal as image data; and

a processor that implements a high priority module for real time control of the imager and a lower priority module that examines the image signal and provides feedback to the high priority module routine.

19. (Original) A method for exposure control in a multi-dimensional imaging device, the method comprising:

generating, at an imager, an end of frame signal;

executing, at a central processor, a first module that controls exposure and gain settings in the imager in response to the end of frame signal;

generating, in the first module, a captured contrast setting, wherein contrast is defined as the product of the exposure setting and the gain setting;

executing, at the central processor, a second module that calculates a target contrast setting in response to the end of frame signal, the captured contrast setting and stored image data;

generating, in the first module, a subsequent exposure and gain setting for the imager in response to the target contrast setting; and

implementing the subsequent exposure and gain setting in the imager.

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20. (Currently Amended) The method of Claim 19, wherein the central processor is additionally responsible for executing at least one imaging device ~~appplication~~ application program.

21. (Original) The method of Claim 19, wherein the central processor is additionally responsible for executing an image device operating system.

22. (Currently Amended) The method of Claim 19, wherein the central ~~processore~~ processor is additionally responsible for executing at least one imaging device application program and an imaging device operating system.

23. (Original) The method of Claim 19, wherein executing, at a central processor, a first module that controls exposure and gain settings in the imager in response to the image signal further comprises executing the first module in a high priority thread routine.

24. (Original) The method of Claim 19, wherein executing, at a central processor, a first module that controls exposure and gain settings in the imager in response to the image signal further comprises executing the first module in a high priority task routine.

25. (Original) The method of Claim 19, wherein executing, at a central processor, a first module that controls exposure and gain settings in the imager in response to the image signal further comprises executing the first module in a interrupt service routine.

26. (Original) The method of Claim 19, wherein executing, at the central processor, a second module that calculates a target contrast setting in response to the image

signal and the captured contrast setting further comprises executing the second module in a low priority thread routine.

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27. (Original) The method of Claim 19, wherein executing, at the central processor, a second module that calculates a target contrast setting in response to the image signal and the captured contrast setting further comprises executing the second module in a low priority task routine.

28. (Original) The method of Claim 19, wherein executing, at the central processor, a second module that calculates a target contrast setting in response to the end of frame signal and the captured contrast setting further comprises implementing histogram processing to calculate a target contrast setting.

29. (Original) A program storage device readable by a processor, tangibly embodying a program of instructions executable by the processor to perform a method for exposure control in a multi-dimensional imaging, the method comprising:

generating, in a high priority module, a captured contrast setting in response to an end of frame signal from an imager, wherein contrast is defined as the product of exposure setting and gain setting;

calculating, in a low priority module, a target contrast setting in response to the end of frame signal from the imager, the captured contrast setting and stored image data;

generating, in the high priority module, a subsequent exposure and gain setting for the imager in response to the target contrast setting; and

implementing the subsequent exposure and gain setting in an imager of the multi-dimensional imaging device.

30. (Original) The program storage device of Claim 29, wherein generating, in a high priority module, a captured contrast setting in response to an end of frame signal from an imager and generating, in the high priority module, a subsequent exposure and gain setting for

the imager in response to the target contrast setting further comprises generating in an interrupt service routine module.

31. (Original) The program storage device of Claim 29, wherein generating, in a high priority module, a captured contrast setting in response to an end of frame signal from an imager and generating, in the high priority module, a subsequent exposure and gain setting for the imager in response to the target contrast setting further comprises generating in a high priority thread module.

32. (Original) The program storage device of Claim 29, wherein generating, in a high priority module, a captured contrast setting in response to an end of frame signal from an imager and generating, in the high priority module, a subsequent exposure and gain setting for the imager in response to the target contrast setting further comprises generating in a high priority task module.

33. (Original) The program storage device of Claim 29, wherein calculating, in a low priority module, a target contrast setting in response to the end of frame image signal from the imager, the captured contrast setting and stored image data further comprises calculating in a low priority task module.

34. (Currently Amended) The program storage device of Claim 29, wherein calculating, in a low priority module, a target contrast setting in response to the end of frame image signal from the imager, the captured contrast setting and stored image data further comprises calculating in a low priority ~~tthread~~ thread module.

35. (Original) The program storage device of Claim 29, wherein calculating, in a low priority module, a target contrast setting in response to the end of frame image signal from the imager, the captured contrast setting and stored image data further comprises implementing histogram processing to calculate a target contrast setting.

36. (Previously Presented) The imaging device of Claim 1, wherein the second module implements computations in response to exposure data transmitted from the first module and image data transmitted from the memory component.

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37. (Previously Presented) An imaging device for capturing optical image data: the device comprising:

an imager for generating an image signal;

a memory component that receives the image signal from the imager and stores the image signal is image data; and

a multi-tasking operating system that implements a multi-tasked exposure control routine.

38. (Previously Presented) The imaging device of Claim 37, wherein the multi-tasked exposure control routine further comprises a first module that controls the exposure and gain setting in the imager and a second module that implements computations in response to exposure data transmitted from the first module to determine a targeted exposure and gain setting.

39. (Previously Presented) The imaging device of Claim 38, wherein the second module implements computations in response to exposure data transmitted from the first module and image data transmitted from the memory component.

40. (Previously Presented) The imaging device of Claim 37, wherein the multi-tasking operating system is controlled by a processor within the imaging device that executes all of the imaging device multi-tasking applications.

41. (Previously Presented) The imaging device of Claim 37, wherein the first module is implemented in a high priority thread.

42. (Previously Presented) The imaging device of Claim 37, wherein the first module is implemented in a high priority task.

43. (Previously Presented) The imaging device of Claim 37, wherein the first module is implemented in an interrupt service routine.

44. (Previously Presented) The imaging device of Claim 37, wherein the second module is implemented in a low priority thread routine.

45. (Previously Presented) The imaging device of Claim 37, wherein the second module is implemented in a low priority task routine.

46. (Previously Presented) The imaging device of Claim 37, wherein the second module includes histogram processing.

47. (Currently Amended) The imaging device of Claim 37, wherein the first module is implemented in a an interrupt service routine and the second module is implemented in a low priority task routine.

48. (Cancelled)